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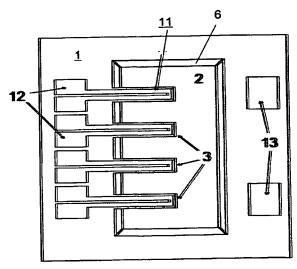
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(54) Title: A CANTILEVER ARRAY CHEMICAL SENSOR



(57) Abstract: The invention relates to a chemical sensor comprising one or more cantilever sensor units with a piezoresistive element for direct read out. The sensor comprises a primary substrate carrying the cantilevers and with a primary substrate carrying the cantilevers and with a primary substrate carrying the cantilevers and with a primary cavity and a primary connecting surface at least partly surrounding said cavity. The cantilevers protrude into the primary cavity. The piezoresistive elements are electrically connected to primary connecting pads on the primary connecting surface. The sensor also comprises a secondary connecting pads, corresponding to the primary connecting pads, on a secondary connecting surface corresponding to the primary connecting surface. The primary connecting surface and the secondary connection surface are mounted to each other so that said primary connecting pads and said secondary connecting pads are direct mounted to each other, preferably in a flip chip mounting.

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#### B. FIELDS SEARCHED

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 00/66266 A (BOISEN ANJA; THAYSEN JACOB (DK); GREY HASIN FRANCOIS DE CHARMOY (DK);) 9 November 2000 (2000-11-09) cited in the application	1-6
Y	abstract page 2, line 4 - page 3, line 13 page 4, line 7 - page 5, line 11 page 6, line 1 - page 7, line 24 page 8, lines 4-19 page 16, line 14 - page 18, line 27 figures 1,2,7-9,11-13	7-26

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International Application No /DK2004/000185

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
WO 0066266		09-11-2000	CA	2372508 A1	09-11-2000
NO 0000200			CN	1360521 T	24-07-2002
			WO	0066266 A1	09-11-2000
			EP	1207958 A1	29-05-2002
			JP	2002543403 T	17-12-2002
			US	2003154771 A1	21-08-2003
			US	6575020 B1	10-06-2003
			AU	4286300 A	17-11-2000
WO 0133226	Α	10-05-2001	AU	7549700 A	14-05-2001
WO 0133220	••	10 00 2001	DE	60012962 D1	16-09-2004
			ĒΡ	1226437 A1	31-07-2002
			WO	0133226 A1	10-05-2001
			JP	2004506872 T	04-03-2004
us 6007728	Α	28-12-1999	SG	96541 A1	16-06-2003